

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

RECEIVED
CENTRAL FAX CENTER

DEC 20 2010

REMARKS

In the Office Action, the Examiner noted that claims 1-10 are pending in the application and that claims 1-10 stand rejected. The Applicant's claims have been amended by this response to correct informalities and to more clearly define the invention of the Applicant.

In view of the amendments presented above, the Applicant respectfully submits that none of these claims now pending in the application are rendered obvious under the provisions of 35 U.S.C. § 103. The Applicant further submits that all of these claims now pending in the application comply with the provisions of 35 U.S.C. § 112. Thus, the Applicant respectfully submits that all of these claims are now in allowable form.

Objections

A. Drawings

The Examiner objected to the Applicant's drawings under 37 CFR 1.83(a) as not showing every feature of claims 1-10.

In response, the Applicant has herein amended the claims and is submitting herewith Figures 5 and 6 that show every feature of the Applicant's amended claims as requested by the Examiner. Having done so, the Applicant respectfully requests that the Examiner's objection to the Applicant's drawings be withdrawn.

The Applicant submits that new Figures 5 and 6 do not add any new matter. More specifically, The Applicant submits that Figure 5 depicts a flow chart with steps of the amended method of claim 1. The steps of amended claim 1 are disclosed in the specification as filed and depicted in Figure 5, as follows:

generate and schedule a request (ref.52 of Figure 5):

"The method comprises requesting the pick-up to read more data from a data stream when the remaining amount of buffered data relating to said data stream is below a threshold" (page 5, l. 10-13)

"every OOM buffer is filled upon request, when reaching a threshold" (page 9, l. 14-19)

"When reaching a threshold T, [...] the buffer may send a refill request" (page 10, l.20)

access and read the requested data stream (ref.53):

"jumping to the other requested streams and reading them" (page 2, l.9)

"every OOM buffer is filled upon request, when reaching a threshold" (page 9, l.14-19)

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

buffer the read data in corresponding buffer (ref.54):

"the data streams ... must be separately buffered after reading" (page 5, I.2-4)

An additional method step is claimed in claims 5-7 and is depicted in Figure 5 as follows:

start-up: "The optimization of the start-up procedure according to the invention consists of two improvements ... The first improvement concerns the amount of buffer to fill during start-up. When the free running scheduler receives a start up command, it is not loading the OOM stream buffers completely ... it fills only a part of the OOM stream buffers ... the scheduler at start-up fills the OOM stream buffers for the audio or subtitle first, and then fills the OOM video stream buffer. Further, it needs to load only the base buffer b_i and the bridge buffer $\square b_i$ for all but the last OOM stream. Also the OOM stream buffer refill requests are set for all but the last OOM stream buffer. Then the last stream buffer may be loaded completely" (page 20, I.8-25)

The Applicant further submits that new Figure 6 depicts components of an apparatus as claimed in the amended claim 9, which are disclosed in the specification as follows:

Pick-Up, Disc:

"controlling a pick-up for reading data streams from a storage medium, usually an optical disc" (page 4, I.30)

three buffers (ref.61-63 of Figure 6):

"additional stream buffers serve to bridge the times that are needed for jumping to the other requested streams and reading them. A typical example comprises three streams: video, audio and subtitles. E.g. the video buffer is dimensioned such that jumping to the audio stream, loading of the audio buffer, jumping to the subtitle stream, loading of the subtitle buffer and jumping back to the video stream can be executed without the video buffer running empty." (page 2, I.7-15);

"When the three streams for video, audio and subtitle are read, the buffers of the lower rated streams audio and subtitle are enlarged in such a way that the video buffer can

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24488

be filled multiple times before the re-filling of audio and subtitle buffers becomes necessary" (page 4, I.2-7);

"every OOM stream has its own buffer" (page 9, I.17);

"This other scheduler model, according to the invention, could be a free running scheduler as described by the following: every OOM buffer is filled upon request when reaching a threshold" (page 9, I.14-19);

"When reaching a threshold T,... the buffer may send a refill request to the scheduler" (page 10, I.20-21)

Request Scheduler (ref.64):

"scheduler model ... could be a free running scheduler" (page 9, I.14-15);

"each request for filling an OOM buffer is queued once" (page 9, I.21-22);

"buffer may send a refill request to the scheduler, and the scheduler queues the request" (page 10, I.21-22)

As such, and for at least the reasons recited above, the Applicant submits that new Figures 5 and 6 do not add any new matter to the application.

Rejections

A. 35 U.S.C. § 112

The Examiner rejected the Applicant's claims 3-7 and 9-10 under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claim 3

The Examiner indicated that in line 2 of claim 3 "all said other data streams" does not have clear antecedent basis and it is not clear as to what it refers.

In response, the Applicant has herein amended claim 3 to remove the word "said".

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

Claim 4

The Examiner indicated that the Applicant's claim 4 is unclear because it appears to be mutually exclusive with claim 3.

The Applicant's claim 3 recites "Method according to claim 1, wherein the integer is the same for all other data streams" and claim 4 recites "Method according to claim 3, wherein the data streams comprise at least a video stream, an audio stream and a subtitle stream". The Applicant respectfully disagrees with the Examiner that the claimed matter is mutually exclusive.

Claims 5-7

The Examiner rejected the Applicant's claim 5-7 indicating that in line 2 of claim 5 the "during initiation" recitation is indefinite.

In response, the Applicant has herein amended claims 5-7 to replace "during initiation" with "during a start-up procedure" to correct the indefiniteness of claims 5-7.

Claim 10

The Examiner rejected the Applicant's claim 10 indicating that claim 10 should depend from claim 9.

In response, the Applicant has herein amended claim 10 to depend from claim 9 as suggested by the Examiner.

Claims 9-10

The Examiner rejected the Applicant's claim 9-10 indicating that claims 9 and 10 are written in means plus function language but that the specification fails to disclose corresponding structure.

In response, the Applicant has herein amended claim 9 to remove the claim plus function language and has claimed specific structure taught in the Specification as pointed out above with reference to new Figures 5 and 6.

Having made the amendments presented above, the Applicant submits that all of these claims now pending in the application comply with the provisions of 35 U.S.C. § 112.

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

B. 35 U.S.C. § 103

The Examiner rejected the Applicant's claims 1-3 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Fujinami (US Patent No. 6,035,092) in view of Kim (US Patent No. 5,521,918). The rejection is respectfully traversed.

The Applicant submits that Fujinami discloses a data reproducing device for reproducing data stored on a recording medium, such as an optical disc, in which video and audio data are recorded in a time-division multiplexing mode (see Fujinami, col.1, lines 25-27). They are separated in a data separation circuit (Fujinami, ref. 21 in Fig.36), which is comprised in all embodiments disclosed in Fujinami. Thus, since the multiplexed stream is stored in a file, it is clear that the video and audio data are recorded together in a single file, but not in separate files, as taught and claimed by the Applicant.

More specifically, the Applicant's invention is directed to an "Out-Of-Multiplex" mode, in which video, audio and further components such as subtitles are stored in separate files, and provides a solution for an optimized accessing schedule to the plurality of files. Such a configuration has the problem that additional pick-up jumps occur, since the plurality of files may be recorded in different positions on the disc. The additional time that the optical pick-up needs for jumping among the files reduces the data rate that it can deliver. Though Fujinami mentions a situation where data for continuous reproduction are obtained from discontinuous points on an optical disc (see col.4, line 15), this refers to a case where both points have video signals recorded thereon. This may result from video editing, and leads to sequential reproduction of the video data from the different points. Thus, the pick-up needs to jump only once.

However, this configuration is different from the Applicant's claimed configuration, where the pick-up is required to jump much more frequently between different files. Moreover, it provides the data from the files for simultaneous reproduction, namely video, audio and subtitles. This problem is not addressed, disclosed, suggested or solved by Fujinami. Instead, when in Fujinami's system a buffer underflow is detected, the decode processing of the video and audio decoders is stopped until the amount of accumulated data in the buffers has increased (see col.22, lines 33-40). That is, Fujinami assumes a continuous data flow coming from the pick-up, and controls the reading of data from buffers, while the Applicant's invention

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

controls the pick-up, and thereby the writing of data into buffers, wherein the data flow coming from the pick-up is not continuous.

The Applicant further submits that Kim fails to bridge the substantial gap between the teachings of Fujinami and the invention of the Applicant. The Applicant submits that Kim discloses adaptive bitstream demultiplexing, and therefore a similar configuration as Fujinami. In Kim, video and audio data is received in a common stream, buffered in an input buffer module FIFO-I and then demultiplexed into separate video and audio data streams (see col.2, lines 55-65). The video data is buffered in a FIFO-V buffer module that is made of three sequential buffer memories, and that each provide a status signal such as an "empty"-flag signal. Likewise, the audio data is buffered in a FIFO-A buffer module that is made of three sequential buffer memories, and that each provide a status signal such as an "empty"-flag signal. The status signals of the individual buffers are used to generate a status signal for the respective buffer module. Contrary to the Applicant's invention, Kim teaches reading a multiplexed data stream at a fixed rate from a digital storage medium (see col.2, lines 59-60).

The Applicant notes that both Fujinami and Kim do not teach, disclose or suggest controlling a pick-up, while the Applicant's amended claim 1 relates to a method for controlling a pick-up. In particular, no request-based pick-up control method is disclosed or suggested in either Fujinami or Kim. Further, both Fujinami and Kim are not suitable for accessing three or more files, as taught in the Applicant's Specification and claimed in the Applicant's amended claims, and Fujinami and Kim both fail to teach or suggest a solution for accessing three or more files.

As such, the Applicant submits that Fujinami and Kim, alone or in any allowable combination, absolutely fail to teach or suggest the invention of the Applicant's claims.

Therefore, the Applicant submits that for at least the reasons recited above, the Applicant's claims are not rendered obvious by the teachings of Fujinami and Kim, alone or in any allowable combination. Therefore, the Applicant submits that the Applicant's claims fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

Concerning the Examiner's arguments on obviousness in item 5.C, the Applicant replies as follows:

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

In item 1), the Examiner maintains that the audio buffer of a modified system inherently operates at a slower clock rate than the video buffer, since the bandwidth of the audio information is smaller than the bandwidth of the video information. However, the Applicant replies that the operating clock frequency of the buffers is not necessarily coupled to the bandwidth of the signals, particularly since both the audio and video data are received from the same multiplexed bit-stream in the prior art systems. Further, the present invention relates to controlling a pick-up, and not to operating frequencies for buffers.

In item 2), the Examiner argues that from the alleged fact that video information sample/clock rates and audio information sample/clock rates are derived from a common single phase-locked-loop, it would be well known to make both sample/clock rates integer multiples of each other. However, this alleged fact would only mean that the sample/clock rate of the phase-locked-loop is a first integer multiple of the video information sample/clock rate and is a second integer multiple of the audio information sample/clock rate. There is no suggested implication about the relationship between the first and second integer. That is, video and audio sample/clock rates may come from a common source clock without being integer multiples of each other.

Conclusion

Thus and for at least the reasons recited above, the Applicant submits that none of the claims, presently in the application, are rendered obvious under the provisions of 35 U.S.C. § 103. The Applicant further submits that all of the claims, presently in the application, comply with the provisions of 35 U.S.C. § 112. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion, it is respectfully requested that the Examiner telephone the undersigned.


Please charge any unpaid, additional fees to Deposit Account No. 07-0832.

Serial No. 10/552,037
Office Action dated 8/20/10
Reply dated 12/20/10

PATENT
PD030036
CUSTOMER NO.: 24498

RECEIVED
CENTRAL FAX CEN
DEC 20 2010

Respectfully submitted,
Dirk Gandolph et al.

By: 
Jorge Tony Villabon
Attorney for Applicants
Reg. No. 52,322
(609) 734-6445

Patent Operations
Thomson Licensing Inc.
P.O. Box 5312
Princeton, New Jersey 08543-5312

December 20, 2010